



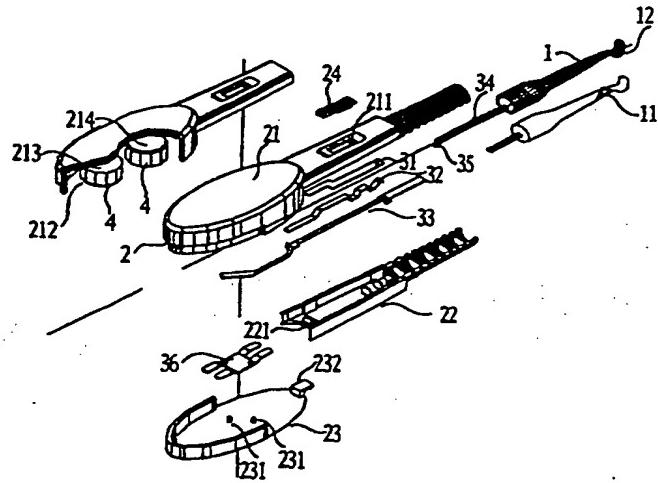
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : A61F	A2	(11) International Publication Number: WO 97/33530
		(43) International Publication Date: 18 September 1997 (18.09.97)

(21) International Application Number: PCT/KR97/00037	(81) Designated States: AL, AM, AT, AU (Petty patent), AZ, BA, BB, BG, BR (Utility model), BY, CA, CH, CN, CU, CZ (Utility model), DE (Utility model), DK (Utility model), EE, ES, FI, GB, GE, HU (Utility model), IL, IS, JP (Utility model), KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL (Utility model), PT, RO, RU (Utility model), SD, SE, SG, SI, SK (Utility model), TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).
(22) International Filing Date: 11 March 1997 (11.03.97)	
(30) Priority Data: 1996/4417 U 11 March 1996 (11.03.96) KR	
(71)(72) Applicant and Inventor: PARK, Seung, Nam [KR/KR]; 97-4, 19/2 Heukseok 3-dong, Tongjak-ku, Seoul 156-073 (KR).	

Published

Without international search report and to be republished upon receipt of that report.

(54) Title: **LIGHTED EAR WAX REMOVER**

(57) Abstract

A lighted ear wax remover consists of an elongated pick means, a hand grip member and a wire member. The lighted ear wax remover has a light-emitting device towards the end of an elongated pick means which is made up of transparent material. The light-emitting device, which is connected to two button cell batteries that are set inside the round area of the hand grip member through electric wire, lightens the dark area of the inside of cared person's ear canal when operator sees the inside of cared person's ear canal to pick cared person's ear wax. The hand grip member, which is designed ergonomically, is large enough for operator to take easily and conveniently. The hand grip member accommodates two button cell batteries inside the round type upper area. The other area, which is connected to the elongated pick means directly, has a switch on one side to control the electricity. The wire member transmits electricity from two button cell batteries to light-emitting device in the elongated pick means.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AM	Armenia	GB	United Kingdom	MW	Malawi
AT	Austria	GE	Georgia	MX	Mexico
AU	Australia	GN	Guinea	NE	Niger
BB	Barbados	GR	Greece	NL	Netherlands
BE	Belgium	HU	Hungary	NO	Norway
BF	Burkina Faso	IE	Ireland	NZ	New Zealand
BG	Bulgaria	IT	Italy	PL	Poland
BJ	Benin	JP	Japan	PT	Portugal
BR	Brazil	KE	Kenya	RO	Romania
BY	Belarus	KG	Kyrgyzstan	RU	Russian Federation
CA	Canada	KP	Democratic People's Republic of Korea	SD	Sudan
CF	Central African Republic	KR	Republic of Korea	SE	Sweden
CG	Congo	KZ	Kazakhstan	SG	Singapore
CH	Switzerland	LI	Liechtenstein	SI	Slovenia
CI	Côte d'Ivoire	LK	Sri Lanka	SK	Slovakia
CM	Cameroon	LR	Liberia	SN	Senegal
CN	China	LT	Lithuania	SZ	Swaziland
CS	Czechoslovakia	LU	Luxembourg	TD	Chad
CZ	Czech Republic	LV	Latvia	TG	Togo
DE	Germany	MC	Monaco	TJ	Tajikistan
DK	Denmark	MD	Republic of Moldova	TT	Trinidad and Tobago
EE	Estonia	MG	Madagascar	UA	Ukraine
ES	Spain	ML	Mali	UG	Uganda
FI	Finland	MN	Mongolia	US	United States of America
FR	France	MR	Mauritania	UZ	Uzbekistan
GA	Gabon			VN	Viet Nam

LIGHTED EAR WAX REMOVER

Technical Field

The invention related to ear wax remover, more particularly to a lighted ear wax remover

5 Background Art

In every day life, the general public, from time to time , pick their ear wax which is stuck inside of ear canal, to hear better, feel cleaner, and above all, keep ear hygienic. People pick their ear wax either with their own hand or with other's help. Being picked with

10 other's help can be considered safer and more convenient than picking alone. However, being picked with other's help has still problems as long as people use conventional ear wax remover such as metal ear pick, bamboo ear pick, and swabs, because of the following drawbacks:

- 15 1) It is inconvenient to use the conventional ear wax remover in the dark ear canal because the targeted object, ear wax, is invisible.
- 2) The use of conventional ear wax remover may accidentally damage ear drum or the skin in the dark ear canal of the cared person, thereby resulting in unnecessary injury.
- 20 3) The shape and size of hand grip of conventional ear wax remover is problematic. The grip is not large enough for people to grasp conveniently, thus causing operator to pick unstably, thereby resulting in unnecessary injury.

Disclosure of invention

- 25 Therefore, a main objective of the present invention is to provide a ear wax remover which does not have the above mentioned drawbacks, when users pick other's ear wax. A lighted ear wax remover includes an elongated pick means, a hand grip member and wire member. According to the present invention, the lighted
30 ear wax remover has a light-emitting device towards the end of a elongated pick means. The light emitting device, which is connected to two

button cell batteries that is set inside of the round area of hand grip member through electric wire, lightens the dark area of the inside of cared person's ear canal when operator sees the inside of cared person's ear canal to pick ear wax of cared person. Shedding light in
5 the dark area is beneficial in many ways. The inconvenience and unsafety can be reduced considerably. In addition, operator can avoid damaging unexpected areas like cared person's ear drum. The hand grip member, which is designed ergonomically, is large enough for operator to take easily and conveniently. The hand grip
10 member accommodates two button cell batteries inside of the round type upper area. The other area, which is connected to the pick means directly as the middle in the whole lighted ear wax remover, has a switch on one side to control the electricity. The wire member transmits electricity from two button cell batteries to
15 light-emitting device in the elongated pick means.

Brief Description of drawings

Other features and advantages of the present invention will become more apparent in the following detailed description of the best mode for carrying out the invention with reference to the
20 accompanying drawings, in which

FIG. 1 illustrates the shape of a lighted ear wax remover of the present invention.

FIG. 2 is a front view of a lighted ear wax remover of the present invention.

25 FIG. 3 is a rear view of a lighted ear wax remover of the present invention.

FIG. 4 is a plane figure of a lighted ear wax remover of the present invention.

30 FIG. 5 is a side view of a lighted ear wax remover of the present invention.

FIG. 6 is a backside view of a lighted ear wax remover of the present invention.

FIG. 7 is a exploded view of a lighted ear wax remover of the present invention.

35 The numbers on the drawings of the best mode for carrying out the

invention have the name or meanings as follows:

1. pick means
 11. light emitting device
 12. the end of the pick means
 - 5 2. hand grip member
 21. body case
 - 211 switch hole
 212. battery case
 - 213 plus terminal
 - 10 214. minus terminal
 22. lower case
 221. fixing device of battery cover on the lower case
 23. battery cover
 231. fixing device of electric terminal plate
 - 15 232. fixing device of battery cover
 24. switch
 3. wire member
 31. minus wire
 32. switch wire
 - 20 33. plus wire
 34. minus wire of light emitting device
 35. plus wire of light emitting device
 36. electric terminal plate
 4. battery
 - 25 Best mode for carrying out the invention
- Referring to FIG 7, a lighted ear wax remover of present invention is shown to comprise a hand grip member 2, an elongated pick means 1 and electric wire member 3. Referring to FIG 7, the elongated pick means 1 is assembled to the end of the hand grip member 2. The elongated pick means 1 is made up of transparent materials which let light pass without being intervened. The end of the elongated pick means 12 is in the shape of spoon and there is a light-emitting device 11 inside of the elongated pick means 1. The hand grip member 2 can be divided into body case 21, lower case 22 and battery cover 23. The body

body case 21 has two round type battery cases 212 in which two button cell batteries 4 are set to supply electricity to the light-emitting device 11. The body case 21 has a switch hole 211 for the switch 24. The lower case 22 is tightly fastened and fitted to the body case 21. The space is made when lower case 22 and body case 21 are assembled. In the space there is a wire member which is made up of electric conductor such as copper plate, copper wire and synthetic material. The plus terminal 213 of the button cell battery 4 and switch 24 are connected through the switch wire 32.

5 The switch 24 and plus wire of light emitting device 35 which is from light emitting device 11, are connected through the plus wire 33. The minus terminal 214 of button cell battery 4 is connected to the minus wire of light emitting device 34 which is from light emitting device 11, through the minus wire 31. The battery cover 10 15 has an electric terminal plate 36, fixed by fixing device of electric terminal plate 231, by which two button cell batteries 4 are connected in series.

The battery cover 23 can be easily joined and disjoined to the lower case 22 by the fixing device of battery cover 232 and the fixing 20 device of battery cover on the lower case 221. Therefore users can change the button cell batteries 4 after disjoining the battery cover 23 from the lower case 22.

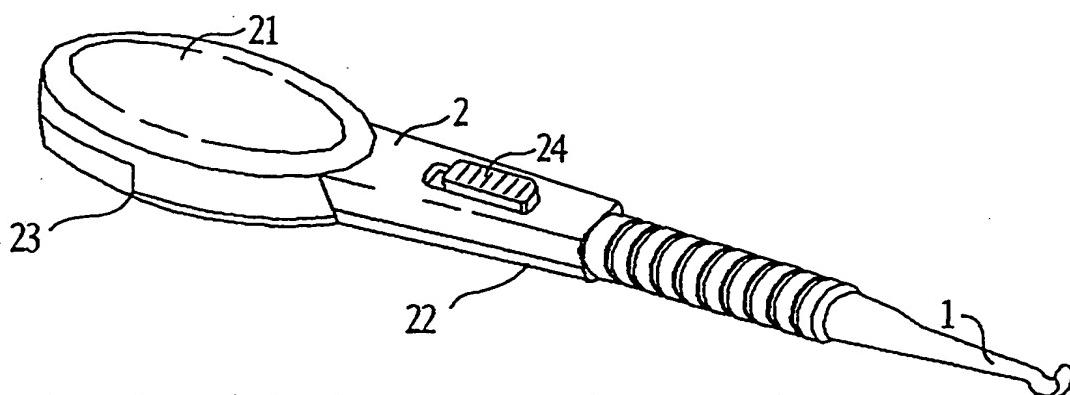
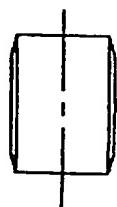
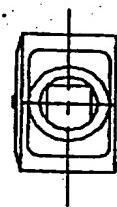
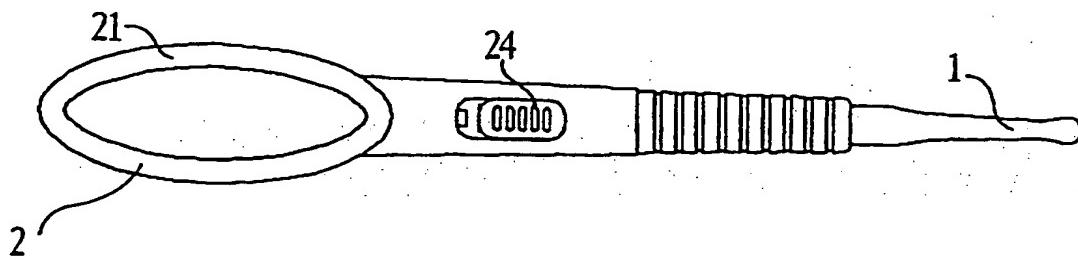
When the switch 24 is turned on, the electric power is supplied to the light-emitting device 11 which send forth light through the 25 elongated pick means 1 made up of transparent material. Therefore users can remove the ear wax conveniently and safely, seeing the inside of cared person's ear canal clearly.

Claims

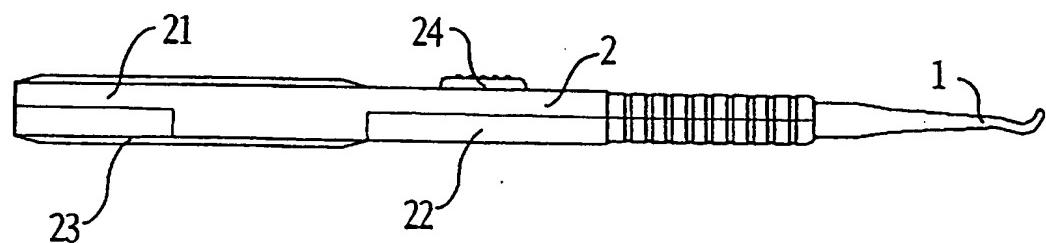
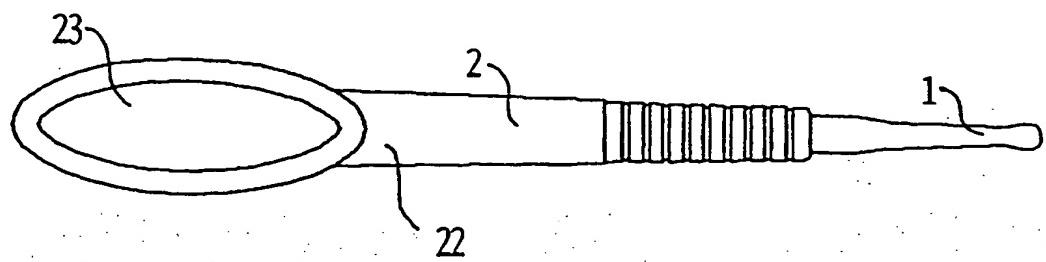
While a best mode for carrying out the invention has been explained and described, it will be apparent that many changes and modifications can be made in the general construction and arrangement of the present invention without departing from the scope and spirit thereof. Therefore it is desired that the present invention be not limited to the exact disclosure but only to the extent of the appended claims.

- 5 1. A lighted ear wax remover comprising a hand grip member which has power suppliers inside, a pick means which has a light-emitting device inside, a wire member which connects batteries to light-emitting device in the pick means,
- 10 2. The light-emitting device mentioned in claim 1. is LED, bulb and synthetic device.
- 15 3. The pick means mentioned in claim 1. is made up of transparent materials.
4. The transparent material mentioned claim 3. is PC, K-resin and synthetic material.
- 20 5. The wire member mentioned claim 1. is copper plate, copper wire and synthetic conductor.

1/3

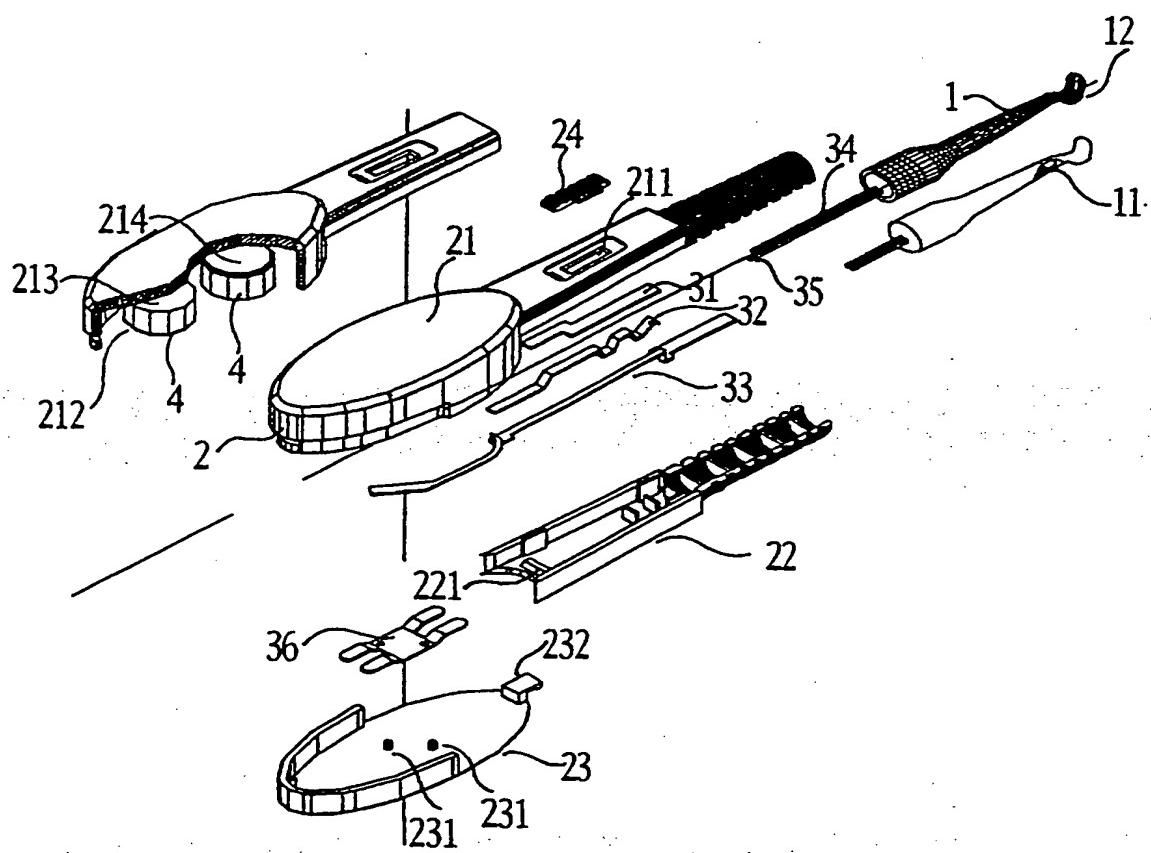
Fig. 1**Fig. 2****Fig. 3****Fig. 4**

2/3

Fig. 5**Fig. 6**

3/3

Fig. 7

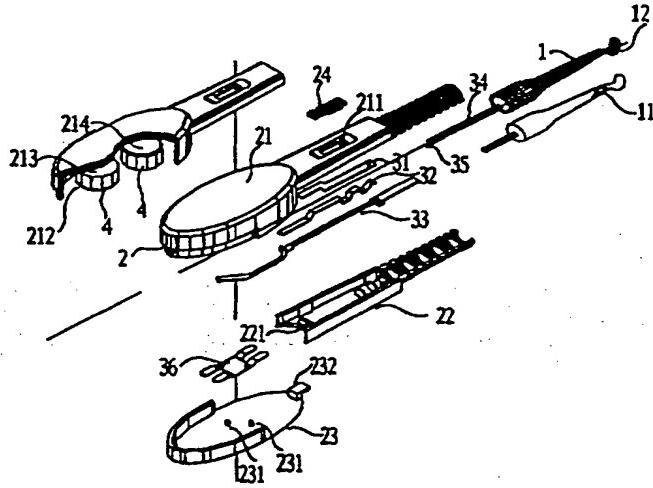




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : A45D 44/00; A61B 17/22, 1/227; A61F 11/00; F21V 33/00		A3	(11) International Publication Number: WO 97/33530 (43) International Publication Date: 18 September 1997 (18.09.97)
(21) International Application Number: PCT/KR97/00037		(81) Designated States: AL, AM, AT, AU (Petty patent), AZ, BA, BB, BG, BR (Utility model), BY, CA, CH, CN, CU, CZ (Utility model), DE (Utility model), DK (Utility model), EE, ES, FI, GB, GE, HU (Utility model), IL, IS, JP (Utility model), KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL (Utility model), PT, RO, RU (Utility model), SD, SE, SG, SI, SK (Utility model), TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 11 March 1997 (11.03.97)			
(30) Priority Data: 1996/4417 U 11 March 1996 (11.03.96) KR			
(71)(72) Applicant and Inventor: PARK, Seung, Nam [KR/KR]; 97-4, 19/2 Heukseok 3-dong, Tongjak-ku, Seoul 156-073 (KR).			
<p>Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p>			
<p>(88) Date of publication of the international search report: 18 December 1997 (18.12.97)</p>			

(54) Title: LIGHTED EAR WAX REMOVER



(57) Abstract

A lighted ear wax remover consists of an elongated pick means (1), a hand grip member (2) and a wire member (3). The lighted ear wax remover has a light-emitting device (11) towards the end of an elongated pick means (12) which is made up of transparent material. The light-emitting device (11), which is connected to two button cell batteries (4) that are set inside of the round area of hand grip member (2) through electric wire, lightens the dark area of the inside of cared person's ear canal when operator sees the inside of cared person's ear canal to pick cared person's ear wax. The hand grip member (2), which is designed ergonomically, is large enough for operator to take easily and conveniently. The hand grip member (2) accommodates two button cell batteries (4) inside of the round type upper area. The other area, which is connected to the elongated pick means (1) directly, has a switch (24) on one side to control the electricity. The wire member transmits electricity from two button cell batteries (4) to light-emitting device (11) in the elongated pick means (1).

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AM	Armenia	GB	United Kingdom	MW	Malawi
AT	Austria	GE	Georgia	MX	Mexico
AU	Australia	GN	Guinea	NE	Niger
BB	Barbados	GR	Greece	NL	Netherlands
BE	Belgium	HU	Hungary	NO	Norway
BF	Burkina Faso	IE	Ireland	NZ	New Zealand
BG	Bulgaria	IT	Italy	PL	Poland
BJ	Benin	JP	Japan	PT	Portugal
BR	Brazil	KE	Kenya	RO	Romania
BY	Belarus	KG	Kyrgyzstan	RU	Russian Federation
CA	Canada	KP	Democratic People's Republic of Korea	SD	Sudan
CF	Central African Republic	KR	Republic of Korea	SE	Sweden
CG	Congo	KZ	Kazakhstan	SG	Singapore
CH	Switzerland	LI	Liechtenstein	SI	Slovenia
CI	Côte d'Ivoire	LK	Sri Lanka	SK	Slovakia
CM	Cameroon	LR	Liberia	SN	Senegal
CN	China	LT	Lithuania	SZ	Swaziland
CS	Czechoslovakia	LU	Luxembourg	TD	Chad
CZ	Czech Republic	LV	Latvia	TG	Togo
DE	Germany	MC	Monaco	TJ	Tajikistan
DK	Denmark	MD	Republic of Moldova	TT	Trinidad and Tobago
EE	Estonia	MG	Madagascar	UA	Ukraine
ES	Spain	ML	Mali	UG	Uganda
FI	Finland	MN	Mongolia	US	United States of America
FR	France	MR	Mauritania	UZ	Uzbekistan
GA	Gabon			VN	Viet Nam

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR 97/00037

A. CLASSIFICATION OF SUBJECT MATTER

IPC⁶: A 45 D 44/00; A 61 B 17/22, 1/227; A 61 F 11/00; F 21 V 33/00
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁶: A 45 D; A 61 B; A 61 F; F 21 V

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPIL, EPODOC, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 785 796 A (MATTSON P.D.) 22 November 1988 (22.11.88), totality.	1-5
A	US 4 572 180 A (DEENADAYALU.R.P.) 25 Febrary 1986 (25.02.86), totality.	1-5
A	US 5 133 721 A (NASA US.NAT. AERO & SPACE ADMIN.) 28 July 1992 (28.07.92), totality.	1

 Further documents are listed in the continuation of Box C. See patent family annex.

- * Special categories of cited documents:
- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
27 October 1997 (27.10.97)	04 November 1997 (04.11.97)
Name and mailing address of the ISA/AT AUSTRIAN PATENT OFFICE Kohlmarkt 8-10 A-1014 Vienna Facsimile No. 1/53424/535	Authorized officer Pirkner Telephone No. 1/53424/322

Form PCT/ISA/210 (second sheet) (July 1992)

The first cited document (US 4 785 796 A) describes an otoscope which includes a lens for viewing the ear canal. A curette is fabricated from a flexible material which is also translucent to transmit light from a light source in the otoscope into the ear canal. An optical path is defined from the light source to illuminate tissues in the cavity. The light path and view path converge so that a direct, illuminated view is provided to the examiner.

The second cited document (US 4 572 180 A) describes a lighted curette is for use in removing an undesirable substance from either an ear canal or a nasal passage. The lighted curette comprises a light to which is attached a handle from which extends a stem. The stem has an engagement member adjacent its end for engaging and removing an undesirable substance from a nasal passage or an ear canal. Light rays are emitted from the light and illuminate the engagement member. A magnification lens is attached to the light for use in observing and removing the undesirable substance.

The device of the third cited document (US 5 133 721 A) is a foreign object remover for ear, nose or throat which comprises (a) housing; (b) electrical power source; (c) tip extending from the housing; and (d) light bulb located on the housing, to illuminate the tip. The tip comprises wire loop(s) of shape memory alloy, switchably connected to the electrical power source, so that when electric current flows through the wire loop, the loop treats up and returns to a previously programmed shape, to facilitate removal of foreign objects.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/KR 97/00037

Im Recherchenbericht angeführtes Patentdokument Patent document cited in search report Document de brevet cité dans le rapport de recherche	Datum der Veröffentlichung Publication date Date de publication	Mitglied(er) der Patentfamilie Patent family member(s) Membre(s) de la famille de brevets	Datum der Veröffentlichung Publication date Date de publication
US A 4785796	22-11-88	keine - none - rien	
US A 4572180	25-02-86	keine - none - rien	
US A 5133721	28-07-92	keine - none - rien	